

Bulletin No. 1

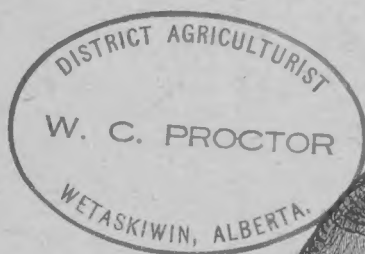
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(Revised)



TURKEY RAISING IN ALBERTA

By

C. W. TRAVES (Poultry Commissioner)



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INTRODUCTION

Profitable turkey raising depends upon the production of high quality birds at the least possible cost. Alberta's foundation breeding stock is second to none in quality, and because of favourable climatic conditions and abundance of cheap feed, turkey raising in Alberta has shown steady progress for many years, and indications are that it will continue to do so.

Centralized assembly and grading, licensing and bonding of dealers, and more efficient supervision with regard to the raising and marketing of turkeys, are contributing factors toward more profitable turkey production. Steps have been taken to put these and additional aids into operation. These aids are of little avail in themselves unless producers remember that premium prices are paid for well finished birds only, and that meat production is the foundation of the business.

This bulletin is designed to provide reliable information for the guidance of active and prospective turkey breeders and growers in respect to methods of producing, raising, and marketing of good birds.

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Turkey Raising in Alberta



STARTING IN THE TURKEY BUSINESS

Sound vigorous and disease free stock is essential to success. Members of the Alberta Turkey Breeders' Association are in a position to supply: (a) breeding stock; (b) day old poults; (c) hatching eggs, from banded and blood tested flocks, thus assuring healthy, vigorous stock of the highest quality for foundation purposes. Commercial hatcheries are supplying poults in large numbers from approved turkey flocks in the most popular breeds. If one desires to start with mature stock one tom and eight to ten females will provide a good foundation. The main breeds in Alberta are: Bronze; Bourbon Red; White Holland; and Narragansett.

Selection of Breeding Birds

Select only vigorous, well matured birds from early hatched stock with strong, but not coarse, bone. Do not, under any circumstances, breed from immature birds.

A warning should be noted by all breeders. Even with good stock, many fail because they cannot resist the temptation to sell the early maturing birds on the market, keeping those left (the poorer and immature birds) for breeding purposes.

The most desirable type of breeding stock for the popular market demand is the small to medium, compact, bird. The head should be strong, but not coarse, with a good bold prominent eye. The back should be broad carrying the width the entire length. The breast bone

should be parallel to the back and should be evenly fleshed from front to rear. Birds should have a good spring of rib and should not be too deep. Shanks should be of medium length. A good breeding bird must be well proportioned and balanced.

MANAGEMENT

Housing

Breeding turkeys should have clean well lighted comfortable quarters. The old idea that breeding turkeys should be allowed to roam at will and have only an open front shelter for the early part of the season in this climate has been proven to be inadequate. If we are to produce February and March eggs for the production of early poults for which there is an evergrowing demand, and which we must obtain if we are to have birds ready for Thanksgiving and overseas markets, breeding turkeys must be comfortably housed.

Mating

Best results will be obtained if not more than ten to twelve females are mated to one vigorous unrelated tom. For best results males should be kept in a pen by themselves and placed with the females each afternoon, preferably after laying has finished for the day.

Experiments have proven that the use of artificial lights improve fertility as well as early egg production. Males should be placed under lights six weeks and females three weeks before being placed together.

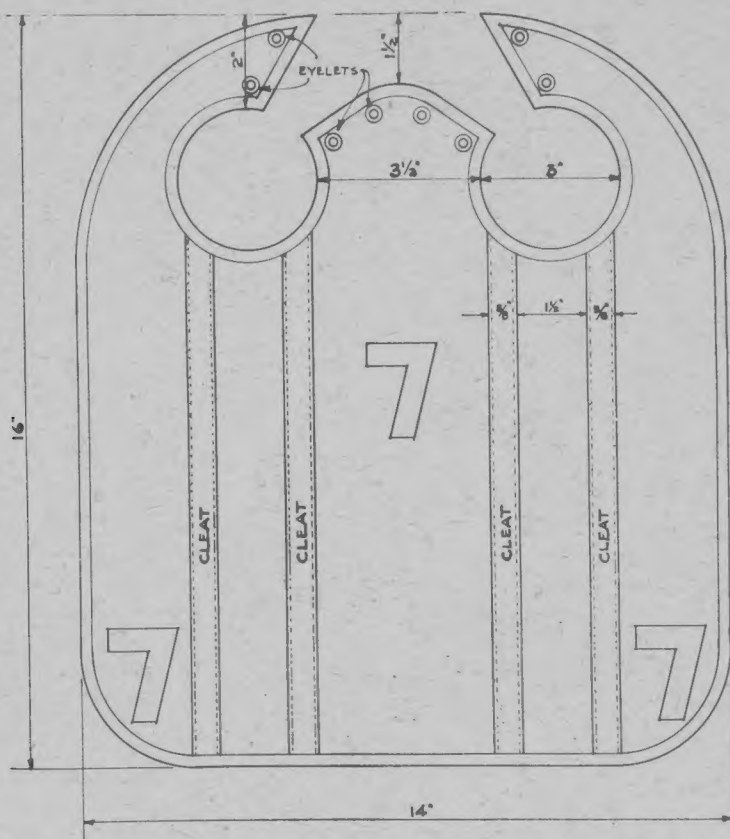
Artificial Insemination

Experiments to date tend to prove that artificial insemination can be successfully used to obtain high fertility of early hatching eggs in this northern climate. Properly handled one male is sufficient for approximately fifty females.

NOTE:—Care must be exercised to see that only fully matured, well balanced, males and females are used where artificial insemination is practiced. This practice should never be used to overcome any difficulties other than climatic and preferential matings.

Saddles

A preventive against injury to females, is to fasten a saddle made of heavy canvas, onto the back of each female. (See Illustration) Ribs on the saddle will prevent the males slipping during mating. Where trap-nesting is practiced, numbers painted on the saddle may be used, thus removing the necessity of handling birds to read leg band numbers. The saddle numbers may be read as the birds walk out of the trap-nests.



Turkey Saddle

The saddles should be placed on the females one month before mating so that the birds may become accustomed to them.

Place the saddle on the turkey's back, with the wing shoulders through the 3-inch openings; lace snugly through the eyelets. If the eyelet overlap, the saddle will conform to the shape of the bird.

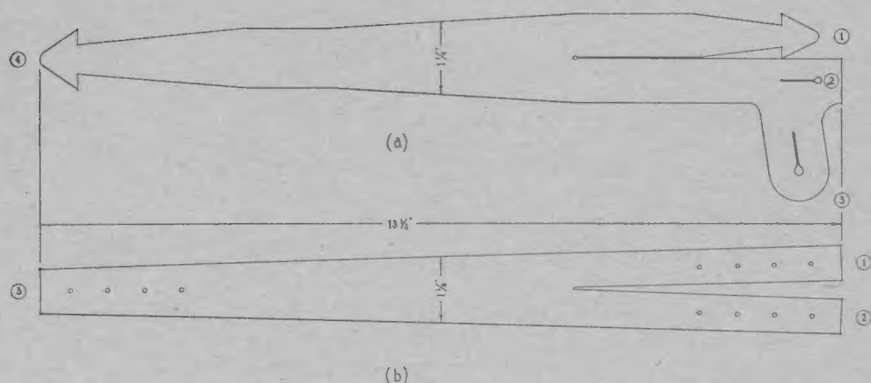
Other types of saddles are available on the market.

Brails

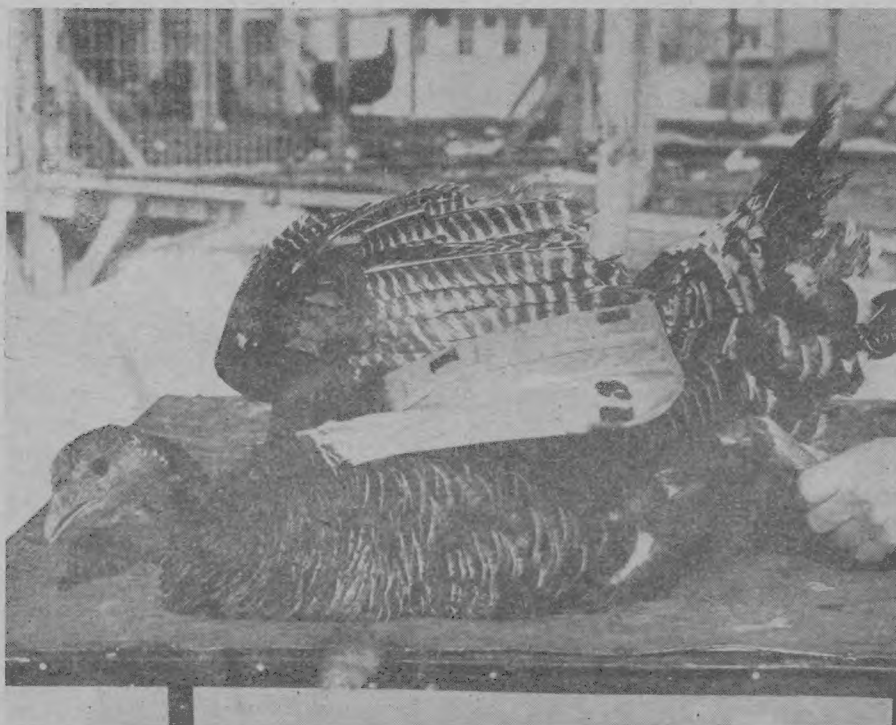
Where birds are not confined to breeding pens and where difficulty is experienced with them flying out of the runs this can be controlled by the use of brails as shown in the illustration.

With the A type of brail, points 1 and 2 go around the shoulder of the wing, the point of 1 being placed through the slot on point 2 and turned so that it is fastened securely. The wing is then folded fairly snug but not too tight. Point 4 is brought between the second

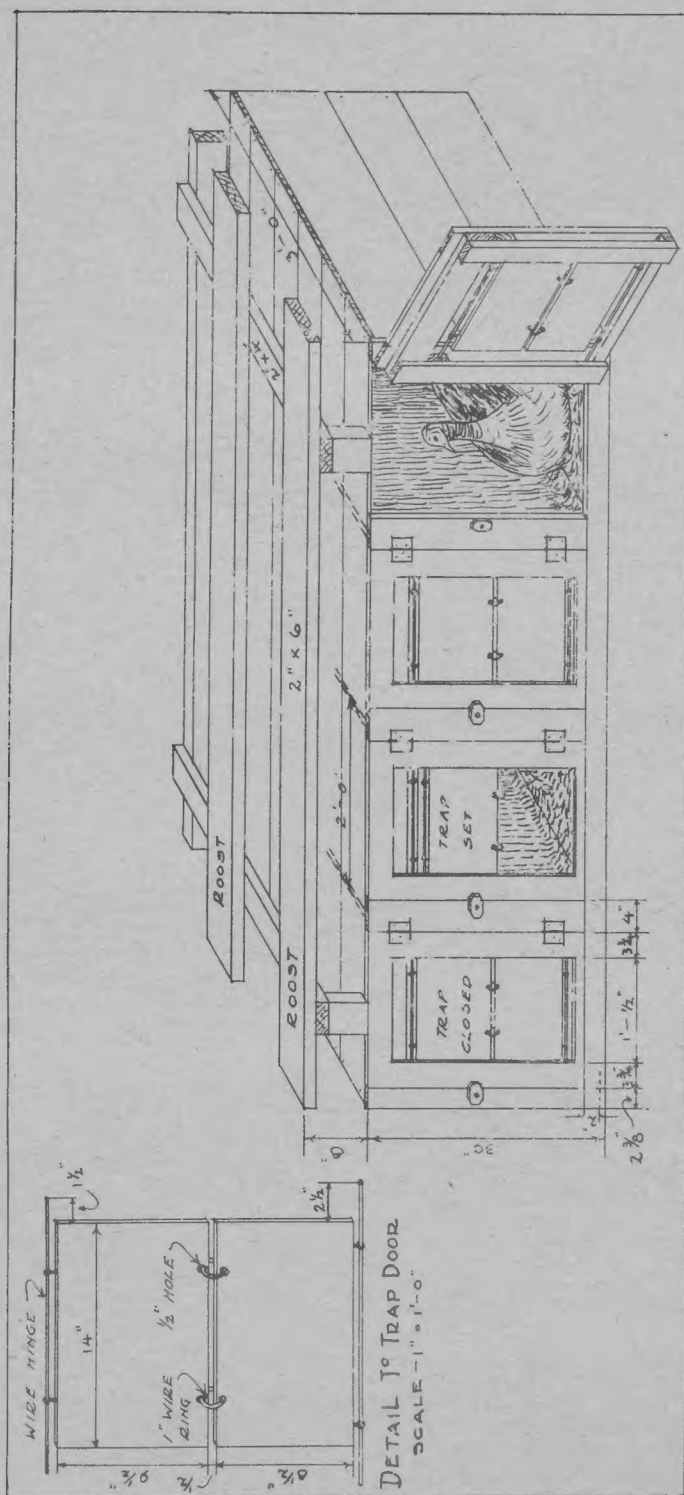
TURKEY BRAILS



Two types of turkey brails.



Turkey brail in correct position around the shoulder and through outside primary wings to prevent flying. The wing is snug but not tight. Also shows saddle fastened around shoulder and in correct position to prevent injury when mating.



Turkey trap nests. (These should be under the drop boards, not with the roosts on top as shown in the cut.)

and third primary feathers, the point going through the slot of No. 3 and being turned so that it is also securely fastened.

With the B type brail, points 1 and 2 are placed around the shoulder and point 3 between the second and third primary feathers. Adjustment is made according to the holes in the three points and these have to be securely fastened with a piece of soft wire or some similar material.

Brails should be made of reasonably heavy, but soft and well oiled, leather.

Nests

Soon after mating, the females commence looking for nesting places. Boxes about two feet square, or barrels on their sides, are quite satisfactory. Trap nesting must be practiced where it is desired to carry on pedigree work.

The trap-nest in use at the Provincial Poultry Plant has been found quite satisfactory. The nests are three feet deep, two feet wide and two and one-half feet high. The entire front of the nest is a door hinged on the side, which allows for the easy removal of the turkey hen. (See Illustration on page 9).



Baled straw nests.

In the middle of the door, a trap similar to the "Sure-Trip-Trap" is installed. This consists of two pieces of thin material 14 inches long, the lower one being eight and one-half inches wide and the upper nine and one-half inches wide, hinged together with iron rings or free working hinges. The trap is hung on a wire at the top supported by screw eyes.

A safeguard against the breaking of eggs in nests during laying, is to place three inches of fine straw over the bottom of the nest, cover with heavy burlap held into position by lathes tacked to the side and ends of the nest.

Another type of nest is the baled straw nest made with bales of straw. These are made by placing bales of straw on their edge lengthwise. Across these are placed two bales of straw flat and these can be built up in tiers as high as desired. They are closed at the back by piling additional bales of straw. (See Illustration on page 10).

On the second and succeeding tiers of nests it is well to place a piece of shiplay across the front so that the birds will not tear apart the bales when getting into and leaving the nests.

Turkeys like the bale type of nest and these can be made in open front shelters or in secluded places with the openings away from prevailing winds.

Feeding

As soon as the birds to be kept as breeders have been selected they should be placed on a breeding mash. This ration should be supplemented by keeping good quality whole oats, grit, shell, and water before the birds at all times, and good quality alfalfa hay should be fed in racks. Whole scratch grains are fed according to physical condition.

As stated previously artificial lights stimulate early maturity and egg production.

Many feed manufacturers are putting up reliable complete breeding mashes or breeders' protein mineral supplement to be mixed with homegrown grains. Where supplements are purchased these should be mixed according to the manufacturer's instructions.

Where skim milk or buttermilk is available this provides excellent feed for breeding turkeys and should be given in the liquid form. It should always be fed sweet or sour, preferably sour, and should not be alternated. Milk should only be fed in glass or crockery fountains.

Breaking Hens of Broodiness

Turkey hens tend to go broody after laying a clutch of eggs, the number vary with individual birds. In breaking hens of broodiness care must be exercised to see that they do not go out of production or lose condition. This can be best accomplished by having a broody crate

with a slat or wire bottom. This crate should be placed up off the floor. The first night the hen insists on remaining on the nest she should be placed in the broody crate. She should have breeding mash, whole oats, and water available in the broody crate at all times. If placed in the crate early enough broodiness is soon broken and production will be continued.

Care of Eggs

Eggs should be gathered as soon as possible after laying to avoid chilling and breaking and they should be packed in clean containers with the large end up and be kept at a temperature of from 50° to 55° F. Cool the eggs before packing. Containers should be placed at an angle of 45° and position changed twice daily. Eggs should not be kept longer than ten days before being placed under a hen or in the incubator for best results.

Care in handling and shipping of hatching eggs is most important. Turkey eggs should be shipped in clean lock-top cases and turkey size fillers and flats should be used.

INCUBATION

(1) Natural

Natural incubation has one advantage over artificial incubation in that the need for artificial brooding is eliminated. Apart from this, it has little to recommend it.

In natural incubation, turkey hens or domestic hens may be used; the former will cover 15 to 20 eggs, while the latter will cover 9 to 11 eggs.

Early in the season, domestic hens may be used to advantage, the turkey being broken off her broodiness and more eggs obtained.

Setting hens, and nests, should be free of lice and mites and should be carefully examined before eggs are set. If lice or mites are found, dust lightly with sodium flouride. Do not use Blue Ointment. Sodium flouride should not be applied to a setting hen during the last two weeks on the nest, nor when she is brooding poults.

The nest should be on the ground, hollowed out and be covered with two inches of straw or hay so that the eggs cannot roll out. Before placing the turkey eggs in the nest, the hen should be allowed to sit on artificial or hen's eggs until settled. She should be removed from the nest for 15 to 20 minutes each day, to feed and drink and to avoid a foul nest. Grain, grit, water and a dust bath should always be near at hand. Wheat, oats or barley, or a mixture of all three will make a good ration, with a limited amount of green feed.

(2) Artificial

This is usually more economical than natural incubation. It has several advantages; eggs can be set when fresh; the nests of broody turkeys can be "broken-up" and more eggs obtained, and the hazards of natural incubation (breaking, chilling, etc.) are eliminated.

A very important additional advantage is the fact that artificial incubation assists in breaking the life cycle of the causative organism of blackhead, one of the deadliest of turkey diseases.

Turkey eggs require an incubation period of 28 days. Any good incubator may be used in a room or cellar where 70° F. can be maintained. The incubator should be operated for three days and the thermostats regulated so as to be certain that everything is in efficient working order before the eggs are put in. The thermometer should be checked by comparison with a clinical thermometer. In sectional machines, when in position, the thermometer should be 1 $\frac{7}{8}$ inches above the bottom of the tray not touching the eggs. Be sure trays do not sag.

The temperature recommended for turkey eggs in sectional machines is: 100 $\frac{1}{2}$ ° F the first week; 101 $\frac{1}{2}$ ° F the second week; 102 $\frac{1}{2}$ ° F the third week; and 103° F (not over) the fourth week.

60% relative humidity should be maintained through the first twenty-four days and 70% thereafter.

After the first day, turn the eggs at least twice a day, and cool them slightly before returning them to the incubator. Test the eggs on the 10th and 20th days and remove all infertile eggs and dead germs. Do not turn the eggs after the 24th day but leave the incubator closed until the hatch is completed.

As the poults hatch, the temperature should be watched closely. If it shows a tendency to rise, open the incubator door slightly to keep the temperature at 103° F. When the hatch is completed, remove all shells and unhatched eggs, and leave the poults in the incubator until they are 24 to 36 hours old. They should then be removed to the brooder house and fed. The incubator should be thoroughly cleaned and disinfected ready for further use.

Breeders who do not have an incubator but whose birds are pullorum tested and approval banded can have their eggs hatched at a nominal cost at an approved hatchery. Eggs purchased from members of the Alberta Turkey Breeders' Association can be hatched in any approved hatchery as all association breeding stock is blood tested for pullorum disease and carry approval bands.

BROODING, REARING AND FEEDING POULTS

These three subjects, together with sanitation, are so intermingled that it is advisable to discuss all at the one time. Without proper sanitation, success is impossible.

(1) Natural Brooding

When the hatch is completed, the hen and poults should be removed from the nest and the hen be confined in a coop until the poults are a few weeks old. Clean nesting material should be supplied regularly. The poults must not be allowed to stray from the hen for a day or two. If a turkey hen is used, she may be allowed to roam for a few hours each day after the first week and coaxed back to her coop by grain feeding until she gets in the habit of returning.

(2) Artificial Brooding

Artificial brooding, properly conducted, affords greater control of environment than does natural brooding, and usually results in lower mortality.

A brooder house similar to one for chicks, is satisfactory. Allow one square foot per poult. The house should be carefully protected from floor draughts; the inside corners should be rounded out to prevent losses from crowding (poults are more apt to crowd than are chicks, especially when about four weeks old); the floor should be covered with cut wheat straw, peat moss, or some other suitable material to a depth of one inch.

Coal, wood, and oil burning stoves of reliable make give satisfaction. In order to lessen fire hazard it is advisable to place brooder stoves in a sand box, on bricks, or on tin and asbestos mats of the type used under coal stoves or heaters.

The stove should be operated for three days and the thermostat regulated before the poults are put under the hover, and the temperature should be 95° F. at the edge of the hover, three inches from the floor. The temperature should be reduced 5° F each week until artificial heat is discontinued. Naturally, weather conditions must be considered while lowering or removing all artificial heat. Chilling and overheating must be avoided at all times.

The brooder house floor should be cleaned every few days and the litter, except peat moss, removed entirely away from the house. Feed troughs and water fountains must be cleaned thoroughly each day.

Poults and chicks must not be brooded together, otherwise disease is sure to follow. Two ages of poults should not be brooded together and preferably not over 250 poults should be brooded in one unit.

Feeding Poults

Turkey growers must realize that turkeys require a higher protein feed than do chickens and that satisfactory growth in poults and growing turkeys cannot be obtained on grains alone. Grains do not contain sufficient protein, minerals or vitamins for normal growth. Proteins are necessary for the formation of muscle and tissue. Birds

(and animals) cannot build up proteins from other food elements, hence protein must be supplied from such sources as meat meal, fish meal, milk powder and skim milk. Mineral and vitamins are essential to normal growth, bone formation and disease resistance, and grains must be supplemented with mineral and vitamin-containing feeds.

Calcium, for bone growth, can be supplied most economically by the addition of ground limestone, ground oyster shell or steamed bone meal; manganese, to prevent slipped tendons, can be provided by adding one pound of manganese sulphate to a ton of mash. Other mineral requirements are normally satisfied without supplementing feeds.

Vitamin A, necessary to protect against colds, roup and other infections, can best be supplied by the use of standardized fish oil, alfalfa leaf meal and green feeds. Vitamins B and G, and their related complex vitamins, are necessary for growth, muscular and nervous co-ordination and digestion; these are present in whole grains but not in sufficient amounts, and so are usually supplied by milk and milk powder. Vitamin D, absolutely essential for bone growth, is best supplied by standardized fish oil.

Poults should have free access to water and sour skim milk when placed in the brooder house. Milk should always be soured before feeding. Milk should not be fed in tin or galvanized containers. Glass or earthenware fountains should be used for milk. It is a good plan to dip the beak of each bird in water when placing it in the brooder house, to accustom it to drinking. Chick size oyster shell and grit must be available at all times.

A reliable brand of commercial turkey starter is recommended. Some prefer the pellet feeds to the mashes. Ample feeding and watering space must be provided and feed and water must be available at all times. For the first few days, to teach the poults to eat, a good practice is to sprinkle rolled oats or bright coloured marbles over the feed in order to attract their attention to the feed. It is important that the chill be removed from water or milk before being placed before the poults.

Fresh clean starter should be kept before the poults until they are eight weeks old when a change should be made from starter to developing mash, the change being made gradually throughout one week.

When the birds are three to four weeks old, the feeding of poults scratch grain should be commenced. The first few feeds may be scattered on top of the mash in the hoppers. Feed the grain late in the afternoon, feeding only what the birds will readily consume in about half an hour. The amount of grain fed should be increased as the poults grow, until at eight weeks old the birds are getting mash and whole oats ad lib.

Throughout the entire growing period the poults should be watched closely and if any tendency to leg weakness or slipped tendon is noted the amount of manganese sulphate in the mash can be doubled

for about ten days. During this period one-half cupful of standard fish oil for each 100 poults should be mixed with some scratch feed and this oil coated grain should be fed in troughs every other day for the ten-day period, after which the extra oil and manganese should be discontinued. The feeding of good quality alfalfa will supply extra vitamins to assist in the assimilation of manganese and other minerals.

Native gravel screened for size according to the age of the poults makes the best grit.

Perches

There is a considerable variation of opinion regarding the correct type of perches. Some people believe that round perches contribute to crooked breast bones while others attribute crooks to flat perches. We recommend that broad flat perches (2 inches by 4 inches with corners rounded off and sloping upward about 20°) should be supplied when the poults are four weeks old, and wider perches (2 inches by 6 inches) substituted as the poults develop. Space perches 20 inches apart and supply sufficient perches to avoid overcrowding.

In our opinion crooked breast bones can be largely overcome by the feeding of properly balanced diet containing sufficient vitamins to enable the poults to absorb the minerals necessary for the building of normal bone structure.

When the poults are eight weeks old, the perches should be raised gradually until they are about four feet high, affording protection from preying animals. It is desirable to have the perches in the shelter of a windbreak.

The birds should be allowed to range freely on alfalfa pasture free from stagnant pools or sloughs. If there are no trees to provide shade, sunflowers will make an excellent substitute. Shade must be provided.



Young turkeys on range at Provincial Poultry Plant, showing plenty of wind-break shelter, mash-hopper space, outdoor roosts and shelter house for wet weather.

Grain, mash, grit and shell should be fed in hoppers and there must be an abundance of fresh water. Turkeys will not range very far where ample feed and water are provided. Drinking troughs, food hoppers and range shelters should be moved frequently to avoid danger from diseases and parasites through soil contamination. The range should be used on alternate years only. We recommend that the three-year rotation system of alfalfa range should be provided.

Under no circumstances should chickens, turkeys, or other stock, range together, nor should turkeys range on ground on which other poultry has ranged during the previous two years. Turkey ranges should never be fertilized with manure from poultry houses.

Continue to feed developing mash and grain on range until the birds are ready for fattening.



Fall and winter quarters showing good protection from the wind, open front shelter, adequate feeding accommodation, rack for alfalfa hay, and bed of straw on the snow.



Another view of fall and winter quarters for turkeys showing good protection from the wind and a liberal bed of straw on the snow.

FINISHING FOR MARKET

Turkeys should not be allowed to roam at will but should be confined to good alfalfa pasture with plenty of feed and water available at all times. Where this practice is followed turkeys are naturally ready for market when fully matured. Where turkeys have been allowed to range, at least six weeks finishing period is necessary. During this time the range must be restricted gradually as turkeys that have been allowed to range will not thrive in close confinement. Shelter must be provided during the late fall for the market birds and for the breeders if they are not to be placed in the breeding pens as soon as selected. (See illustrations VII and VIII).

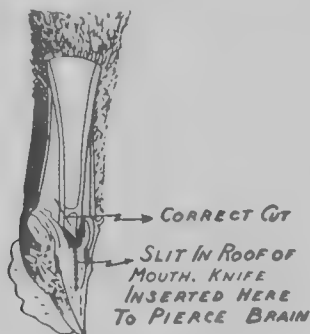
During the finishing period it is a good practice to feed boiled whole grains or a fattening mash, preferably moistened with milk, in troughs twice daily. The grains or the moist mash should be prepared the day before as this will increase the digestibility and improve the palatability. Feeding should be regular at all times. Feed troughs must be kept clean and unconsumed moist mash removed. Dirty hoppers support fungus growth, which menace the birds' health. Fresh water and grit must be available at all times.

KILLING, DRESSING AND MARKETING

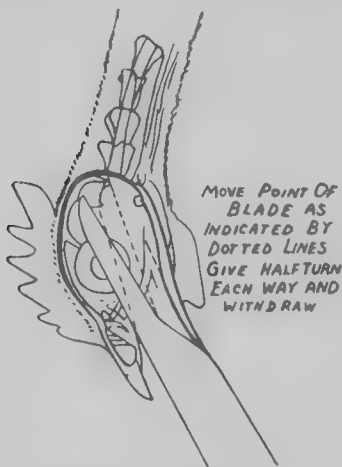
Turkeys lose weight rapidly when shipped alive, particularly if crowded into marketing crates. For this reason the birds should be killed and dressed at home before they are sold, if at all possible. Careless handling of live birds, just before killing, often bruises them, thus lowering their quality and the price received. They should be starved for 24 hours before killing, receiving all the water they can drink. This helps to empty the crop and intestines, thus avoiding heavy docking by graders.

Killing

For best results use a sharp knife, about the size of a butcher's boning knife, having a blade about five inches long and about one-half-inch wide and one-quarter inch at the point. The usual method of killing is as follows: Hang the birds by the feet by means of a cord; pass the knife down the throat and sever the large vein back of the cleft in the roof of the mouth as shown in diagram. This must be cut cleanly and the blood allowed to flow freely as a poorly bled carcass is blotchy and of low grade. Next pass the knife into the cleft of the roof of the mouth and into the brain and give the knife a quarter turn. If the stick is correct, the main tail immediately contracts with a convulsive shiver, then relaxes and spreads out into a fan. Immediately after withdrawing the knife, a weighted can should be hooked into the bird's lower mandible (beak) to catch the blood.



HEAD OF BIRD WITH LOWER JAW
AND PORTION OF SKIN OF NECK REMOVED



KNIFE IN POSITION IN BRAIN
OF BIRD

Showing correct method of cutting the jugular vein and piercing the brain.

Plucking

As turkeys are loose feathered, they are usually dry picked. First remove the main tail feathers, Then remove all feathers from the wings, body and neck, and all pin feathers. Plucking must be done carefully to avoid breaking the wings and tearing the skin. After plucking, blood should be washed from the head and mouth, and dirt washed from the feet and vent. It is essential that all feathers be removed from close to the head, the hocks, and the wing tips as these have to be removed at the assembly points if left on the birds at the farm. Many birds are graded B or C because of a few pin feathers being left on the birds. The proper time to remove all pin feathers is immediately after the bird has been killed and is still warm.

As soon as dressing is completed the birds should be cooled as quickly as possible. This is done by hanging them in a cool place in such a manner as to allow the air to circulate around them. Do not allow to freeze, as frozen birds are put in the lower grades.

It is important that the birds be handled properly after killing and dressing, as the bloom secured by good feeding and efficient killing and dressing can easily be lost through carelessness.

The head should then be wrapped to keep blood from soiling the skin and the birds packed in a suitable paper-lined container for shipping to market. Care should be taken to prevent the carcasses from freezing on the way to the assembly station.

Where facilities are not available for home killing the services of a custom killing station or of a wholesaler who gives rail grade service should be used.

DISEASES AND PARASITES

This leaflet deals only with the one disease (Blackhead) of particular significance to turkey growers.

Leaflets dealing with other diseases such as colds, roup, tuberculosis, etc., as well as with external and internal parasites, and house plans, can be obtained on request from the Poultry Branch, or Extension Branch, Department of Agriculture, Parliament Buildings, Edmonton, Alberta, or from your District Agriculturist.

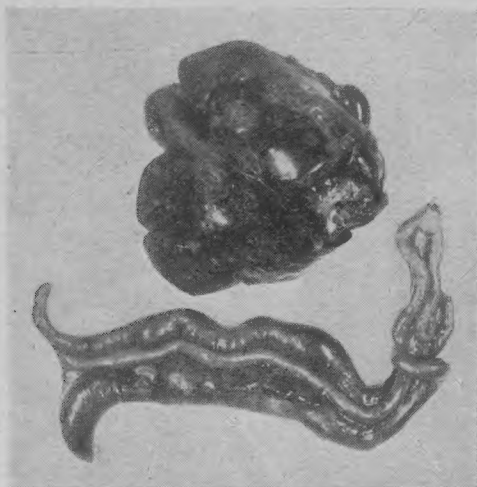
Blackhead (Enterio-hepatitis)

Cause— This disease is caused by protozoan (one-celled animal) parasite. This parasite has a peculiar life cycle, in that it is harboured by the caeca worm of the chicken. The parasite can live a long time in the caeca worm and its egg. This, together with the fact that chickens are not as a rule highly susceptible to "blackhead," has frequently been responsible for the transmission of the disease from apparently healthy chickens to turkeys.

Symptoms— Blackhead, the common name for the disease, is frequently a misnomer. Sometimes the head does become darkened, but this condition is not a characteristic of this disease alone. Characteristic symptoms are weakness, drowsiness, drooping tail, ruffled feather, a hanging head and sulphur-coloured droppings. Young poults may have an acute type and die shortly after symptoms are observed. In adults, the birds frequently are sick several days before death occurs, and they become emaciated.

Turkeys of all ages are susceptible, the heaviest losses occurring during the first 12 weeks of life. Occasionally heaviest losses occur just after the birds are put on a fattening mash to finish them for market.

Mortality is high, and once the disease is established in a flock, birds die at intermittent intervals.



Ulcer-like lesions in liver of a turkey affected with Blackhead. Caeca congested with blood and cheesy material.

Post-mortem Findings— Usually the liver and caeca are the principal organs showing marked changes. The caeca are greatly enlarged and inflamed, the contents may be slimy, foul smelling and a yellowish green in colour, or may consist of a hard, cheesy core. The liver presents a characteristic appearance (see illustration), with yellowish cheesy nodules, sunken in the tissue, in contrast with tubercular nodules, which are hard and raised.

Treatment— Many drugs have been tried with little success, and there is no satisfactory treatment.

Prevention— Keep chickens and turkeys apart. Do not range poults on ground on which chickens have run. Provide plenty of fresh, green range, rotating yards so that birds are not raised on one piece of ground for two years in succession. In flocks where blackhead has occurred, the poults should be hatched in incubators and be brooded artificially.

DISPOSAL OF DEAD BIRDS

No hole is deep enough to prevent dogs or other animals from digging up buried carcasses. Dead birds should be burned, the only effectual and safe way to dispose of birds that have died from disease.

GENERAL COMMENTS

Good stock, good management, and good feed are absolutely necessary for profitable turkey production. Sanitation at all times

must receive careful attention. The warning herein given, regarding the ranging of chickens and turkeys together, should be taken seriously, as many turkey raisers have failed through not taking this precaution. Sick and droopy birds should be isolated as soon as observed, and the trouble determined as soon as possible. Early recognition of disease symptoms and proper precautionary measures may save a serious outbreak of disease and prevent heavy losses.

NOTE:—A leaflet on "Confinement Rearing of Turkeys" is being prepared.

TABLE I
MASH MIXTURES

FEED	Turkey Starter	Turkey Developing Mash	Turkey Breeders' Mash	Fattening Ration
Ground wheat	20 lbs.	30 lbs.	20 lbs.	30 lbs.
Ground oats (plump)	5 lbs.	20 lbs.	20 lbs.	35 lbs.
Ground hulled oats	10 lbs.	.....	.....	.....
Ground barley	15 lbs.	13 lbs.	17 lbs.	30 lbs.
Wheat bran	5 lbs.	10 lbs.	10 lbs.	.....
Milk powder	5 lbs.	.....	6 lbs.	.....
Fish meal	12 lbs.	10 lbs.	8 lbs.	.....
Meat scrap	15 lbs.	5 lbs.	4 lbs.	5 lbs.
Alfalfa meal	10 lbs.	8 lbs.	10 lbs.	.....
Ground limestone	1 lb.	1 lb.	2 lbs.	.....
Salt	1 lb.	1 lb.	1 lb.	.....
Fish oil	½ lb.	1 lb.	1 lb.	.....
Bone meal .....	.....	1 lb.	1 lb.	.....
Manganese sulphate	1 lb. per ton	1 lb. per ton	1 lb. per ton	.....
Riboflavin	4 gm. per ton	1.5 gm. per ton	2 gm. per ton	.....
Potassium iodide	1½ oz. per ton	.....	.....	.....
Choline premix	6 lbs. per ton	.....	.....	.....
(Choline Chloride 25%)				
Nicotine acid	10 gms. per ton	.....	.....	.....
	100 lbs.	100 lbs.	100 lbs.	100 lbs.

SCRATCH MIXTURES

FEED	Turkey Scratch	Developing Scratch
Sized wheat	60 lbs.	.....
Pinhead oatmeal	40 lbs.	.....
Wheat .....	.....	30 lbs.
Whole oats .....	.....	50 lbs.
Barley .....	.....	20 lbs.
	100 lbs.	100 lbs.

HOW FAST DO TURKEYS GROW?—HOW MUCH DO THEY EAT?

The following table has been prepared to show the approximate rates of growth of turkeys in good health, on an adequate ration, their weights at different ages and the approximate amounts of feed needed to produce one pound of gain in weight at successive periods during the development of the turkeys. The feed consumption figures include allowance for green feed.

Ages in months	Age in weeks	Average wt. of Toms and hens combined	gain in wt. pounds for period	Feed consumed each week	Pounds total cumulative feed required	Successive weekly feed required per pound of gain	Feed required per pound gain to date
		(Initial Wt. 12)					
	1st	.32	.2	.1			
	2nd	.58	.3	.3	.4	1.1	
	3rd	.93	.35	.5	.9	1.4	1.1
	4th	1.4	.45	.7	1.6	1.6	1.25
1st MONTH	TOTAL	1.4	1.26	1.6	1.6	Av. 1.3	
	5th	1.9	.50	1.1	2.7	2.2	1.5
	6th	2.4	.55	1.5	4.1	2.6	1.8
	7th	3.1	.65	1.8	5.9	2.8	2.0
	8th	3.8	.76	2.3	8.2	2.9	2.2
2nd MONTH	TOTAL	3.8	2.5	6.6	8.2	Av. 2.7	
	9th	4.7	.8	2.3	10.5	2.7	2.3
	10th	5.6	.9	2.4	12.9	2.6	2.4
	11th	6.5	.9	2.6	15.5	2.9	2.4
	12th	7.4	.9	2.7	18.4	3.2	2.5
3rd MONTH	TOTAL	7.4	3.6	10.2	18.4	Av. 2.8	
	13th	8.4	.9	3.0	21.4	3.2	2.6
	14th	9.3	.9	3.3	24.7	3.4	2.7
	15th	10.3	1.0	3.5	28.2	3.5	2.8
	16th	11.3	1.0	3.7	31.9	3.7	2.8
4th MONTH	TOTAL	11.3	3.9	13.5	31.9	Av. 3.5	
	17th	12.2	.9	3.9	35.8	4.4	2.9
	18th	13.1	.9	4.2	39.9	4.6	3.1
	19th	14.0	.9	4.2	44.2	4.9	3.2
	20th	14.8	.9	4.3	48.5	5.1	3.3
5th MONTH	TOTAL	14.8	3.5	16.7	48.5	Av. 4.8	
	21st	15.7	.8	4.4	52.9	5.1	3.4
	22nd	16.5	.8	4.4	57.3	5.6	3.5
	23rd	17.3	.8	4.8	62.2	6.0	3.6
	24th	18.0	.8	5.2	67.4	6.5	3.7
6th MONTH	TOTAL	18.0	3.3	18.8	67.4	Av. 5.8	
	25th	18.9	.8	5.6	73.0	7.3	3.8
	26th	19.7	.8	6.1	79.0	7.6	4.0
	27th	20.5	.8	6.4	85.4	8.0	4.2
	28th	21.3	.8	6.8	92.2	8.4	4.4
7th MONTH	TOTAL	21.3	3.2	24.9	92.2	Av. 7.7	

Turkeys do not consume food at a uniformly increasing rate nor do they make uniform gains in weight as they increase in age, but may show considerable variations in both from week to week, although on a full ration.

Clear, cool or cold weather is more conducive to heavy food consumption and rapid growth than warm or stormy weather. The above table is a summary of results of a large number of actual production operations in 1941, with semi-broad breasted Bronze turkeys.

Smaller varieties of turkeys, than represented by these figures, as indicated by the weights, will show smaller growth figures and less feed consumption but may show similar pounds of feed used per pound of gain in weight.

It may be expected that turkeys hatched early and carried through a long summer season will mature at a larger size, take more time and require more food to reach maturity than turkeys hatched later and fed a more concentrated ration.

The above tables are based on dry-lot feeding. If alfalfa pasture or mixed grass pasture is provided in ample quantity, the gain and mash requirements will be reduced about 18 to 20 per cent.

Compiled by L. E. CLINE, University of Nevada.

